

Appl. No. 09/851,340
Amdt. dated October 26, 2004
Reply to Office action of August 12, 2004

REMARKS/ARGUMENTS

Receipt of the Office action dated August 12, 2004, is hereby acknowledged. In that Action, the Examiner: 1) rejected claim 13 under 35 U.S.C. 102(e) as allegedly anticipated by Massof (U.S. Pat. No. 6,529,331); 2) rejected claims 1-5 and 7-11 under 35 U.S.C. 103(a) as allegedly unpatentable over Massof in view of Green (U.S. Pat. No. 5,124,659) and Garlick et al. (U.S. Pat. No. 6,614,448); 3) rejected claims 14-21 under 35 U.S.C. 103(a) as allegedly unpatentable over Massof in view of Green; and 4) rejected claims 6 and 12 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

With this response, Applicant amends claims 6 and 12. Reconsideration is respectfully requested.

I. EFFECTIVELY ALLOWED CLAIMS

In the Office action dated August 12, 2004, the Examiner indicated claims 6 and 12 would be allowable if rewritten into independent form. With this Response, Applicant rewrites claims 6 and 12 into independent form, including the limitations of the base claim, and intervening claims. It is noted that each of these claims already contained these limitations by virtue of their previous dependency. These claims should now be in a condition for allowance.

II. CLAIM REJECTIONS

A. Claim 1

Claim 1 stands rejected as allegedly obvious over Massof, Green and Garlick.

Massof appears to be directed to a head mounted display with full field of view and high resolution. (Massof Title). Applicant agrees with the statement of the Office action that "Massof et al. do not disclose the display comprising generating an inner region display signal of the frame of an image, and generating an outer region..." (Office action dated August 12, 2004, Page 3).

Green is directed to display device. (Green Title). Green appears to be concerned only with providing a liquid crystal display where each pixel changes brightness without a visually perceptible position change.

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The concentric arrangement of the area is significant. Since the human eye is very sensitive to small errors in apparent pixel position, it is important that each of the areas has the same average position, so that different bit patterns cause the pixel to change brightness only, without apparent positional change.

(Green, Col. 3, lines 6-11). The various regions illustrated in Green's Figure 1 are of a **single pixel** of a liquid crystal display. (Green, Col. 3, lines 1-4). Green does not expressly or implicitly discuss the resolution of the overall liquid crystal display incorporating the pixels that change brightness without visually perceptible positional change.

Garlick appears to be directed to a method and related system of displaying a **graphics primitive** that reduces or eliminates aliasing. (Garlick Col. 7, lines 26-55). In particular, and referring to Garlick's Figure 2A, pixels within a graphics primitive 208 may have high resolution (pixels 221A-221P), and pixels at the periphery of the **graphics primitive 208** may have low resolution (pixels 222A-222R). (*Id.*) However, in Garlick the areas of high resolution and low resolution are dictated by the **boundaries of the graphics primitive, not the position of the graphics primitive on the display**.

Therefore, the effective resolution of each of [the] pixels 221A-221P and 222A-222R **is unrelated to the physical location of the pixel on the screen**, and instead changes dynamically depending on the image 220 being displayed.

(Garlick, Col. 7, lines 56-59).

Claim 1, by contrast, specifically recites, "generating an inner region display signal of the frame of an image; determining at least one of a motion, brightness or color characteristic from the inner region display signal; [and] generating an outer region display signal of the frame of the image using the at least one motion, brightness or color characteristic... ." None of the cited references, alone or in combination, teach or suggest such a system. The Office action of August 12, 2004 admits as a matter of law that Massof fails in this regard. Applicant further submits that Massof taken with Green's single pixel having several regions, even if used across an entire liquid crystal display, still fails to teach "generating an outer region display signal of the frame of the image using the at least one motion, brightness or color characteristic [determined from

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the inner region]." Further, Garlick speaks to resolution of graphics primitives without regard to their location on the screen. Thus, Massof, Green and Garlick fail to teach, "generating an inner region display signal **of the frame of an image**; ... [and] generating an outer region display signal **of the frame of the image using the at least one motion, brightness or color characteristic [determined from the inner region].**"

Based on the foregoing, Applicant respectfully submits that claim 1, and all claims which depend from claim 1 (claims 2-5 and 7), should be allowed.

B. Claim 8

Claim 8 stands rejected as allegedly obvious over Massof, Green and Garlick.

Claim 8 recites a "a display comprising a **plurality of pixels**, the display having an inner region and an outer region of substantially lower resolution than the inner region; and a controller [that] generates an inner region display signal, and an outer region display signal using at least one of a motion, brightness or color characteristic from the inner region display signal." The combination of Massof, Green and Garlick does not teach or fairly suggest that an outer region display signal for a display having a plurality of pixels should be related to one of a motion, brightness or color of the inner region display signal.

Based on the foregoing, Applicant respectfully submits that claim 8, and all claims which depend from claim 8 (claims 9-11), should be allowed.

C. Claim 13

Claim 13 stands rejected as allegedly anticipated by Massof.

Massof's Figure 11, relied upon in the Office action for an alleged teaching of several elements of claim 13, illustrates "barrel distortion." (Massof, Col. 7, lines 1-2).

[Barrel distortion] occurs in optical systems that use flat surfaces to represent a curved field. **To avoid the field distortion problem illustrated in FIG. 11**, the Fresnel lenses 40 and video displays 60 used in the present invention are, as shown in FIGS. 6 and 7, configured to be substantially tangent to the surfaces of concentric spheres.

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(Massof, Col. 7, lines 2-7 (emphasis added)). Thus, the system of Massof avoids the distortion illustrated in Figure 11 by placing the Fresnel lenses and video displays tangent to surfaces of concentric spheres.

Claim 13, by contrast, specifically recites, "determining an amount of distortion for image signal data, **the distortion acting to distort a source image conveyed by the image signal data so that a field of view of the source image is expanded**; adjusting the image signal data so that the source image conveyed by the image signal data **is distorted** according to the determined amount of distortion; generating a display signal using the adjusted image signal data; and **displaying a distorted image** on a display by using the display signal." Not only does Massof fail to teach or suggest "the distortion acting to distort a source image conveyed by the image signal data so that a field of view of the source image is expanded," but Massof teaches away from such a system by teaching placement of Fresnel lenses and video displays to avoid distortion.

Based on the foregoing, Applicant respectfully submits that claim 13, and all claims which depend from claim 13 (claims 14 and 15), should be allowed.

D. Claim 16

Claim 16 stands rejected as allegedly obvious Massof and Green.

Claim 16 recites, "the source image distorted on the display in the outer region." Massof teaches avoiding the field distortion problem by placement of Fresnel lenses and video displays. (Massof, Col. 7, lines 2-7). Thus, Massof, even taken with Green, teaches away from the limitations of claim 16.

Based on the foregoing, Applicant respectfully submits that claim 16 and all claims which depend from claim 16 (claims 17-19), should be allowed.

E. Claim 20

Claim 20 stands rejected as allegedly obvious over Massof and Green.

Claim 20 specifically recites, "optics arranged in the wearable display, wherein the optics modify an image displayed by the display by distorting an outer region of the image by a greater amount than an inner region of the image **so that a field of view of the image is increased**." Massof teaches avoiding field distortion by placement of Fresnel lenses and video displays. (Massof, Col. 7, lines 2-7). Thus, Massof, even taken with Green, teaches away from the

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distortion limitations of claim 16. Moreover, Massof and Green fail to teach or fairly suggest distortion as a mechanism to increase the field of view of the image.

Based on the foregoing, Applicant respectfully submits that claim 20, as well as claim 21 which depends from claim 20, should be allowed.

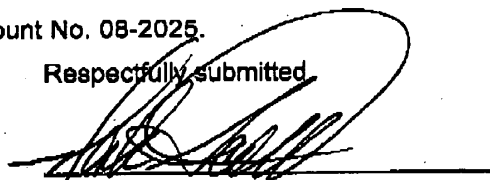
III. CONCLUSION

Applicant respectfully requests reconsideration and allowance of the pending claims. If the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, Applicant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,



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